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PRINCIPAL INVESTIGATOR: Jay B. Roberts

CONTRACTING ORGANIZATION: Saint Francis University
Loretto, PA 15940

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Jay B. Roberts, MA, Director
jroberts@cermusa.francis.edu

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13. SUPPLEMENTARY NOTES

14. ABSTRACT Nurses constitute the largest sector of the healthcare workforce within the United States; therefore it is critical that nurses receive appropriate training in disaster nursing. Consequently, efforts are needed to develop, communicate, and deliver these competencies, as well as the education and training which supports the development of these competencies. This study evolved over a period of time and is based upon prior research, review of the literature, and feedback from key stakeholders at the local, state, and national level that indicates significant gaps in knowledge, skills, and attitudes among medical providers who respond to disasters. This study aims to (1) identify and validate evidence-based nursing competencies for military disaster response and the educational curriculum to support these competencies; (2) identify and validate continuing nursing education and training curriculum which supports evidence-based nursing competencies for military disaster response; and (3) identify and test technology that can be used in the delivery of disaster preparedness education. Phase 1 of this research (identification and testing of technology that can be used in the delivery of disaster preparedness education) was completed in FY10. It also will explore how reliable alternative, technologically-enhanced mobile educational content delivery models are in delivering educational content. During Phase 1 changes in knowledge, skills and attitudes among nursing students as a result of disaster preparedness education and training received in their core nursing curriculum were evaluated. Furthermore, the effectiveness of utilizing a mobile learning platform in the delivery of disaster preparedness education and training was measured. The goal of this research is to evaluate changes in knowledge, skills, and attitudes among nursing students as a result of education and training. Future phases of the study are expected to provide data supporting specific nursing competencies in disaster preparedness and response.

15. SUBJECT TERMS: Competencies, Continuing Healthcare Education, Disaster Preparedness, Distance Learning/Education, Information/Wireless Technology, Mobile Learning Platform, Nursing, Telemedicine/Telehealth.

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TABLE OF CONTENTS

CERMUSA FY10 STAFFING LIST

STAFF MEMBER	ROLE
Gabrielle M. Cronin	Instructional Designer
James F. Gerraughty	Program Manager
Brenda L. Guzic	Assistant Director for Telehealth
Jennifer L. Irvin	Programmer/Systems Analyst
Jean A. Kline	Administrative Assistant (DL)
Dawna R. Knee	Technology Coordinator
Lori A. McClellan	Health Research Communications Specialist
Eric S. Muncert	Telehealth Research Specialist
Jay B. Roberts	Director
Mary Jane Rowland	Finance/Business Manager
Michael E. Shanafelt	Senior Programmer/Systems Analyst
Jacob Taylor	Information Technology Systems Administrator
Kent P. Tonkin	Assistant Director for Information Technology
Christine Trimbath	Part time - Telehealth Research Specialist
David M. Wolfe	Wireless Communications Specialist
Bernadette A. Yeager	Research Logistics Specialist
Steven Bickford (Termination date 7/16/2012)	Technology Coordinator

Saint Francis University
Nurse Education-CERMUSA
September 2011 to September 2012

There were no publications or presentations conducted under the Nurse Education-CERMUSA grant during this period of performance.

Nurse Education-CERMUSA FY10 Research Summary

This report serves as documentation of the research accomplishments of Saint Francis University's Center of Excellence for Remote and Medically Under-Served Areas (CERMUSA) during the period September 12, 2011 to September 11, 2012 as they relate to the study entitled "Strengthening Nursing Curriculum to Support Humanitarian Assistance and Disaster Preparedness Competencies". The research results and other documentation presented in this report exemplify CERMUSA's tradition of applying novel combinations of commercial-off-the-shelf (COTS) technologies in exploring solutions to the challenges faced in providing disaster preparedness healthcare education to rural and remote areas. This research has been conducted with input from community partners and subject matter experts in the field of disaster preparedness in direct response to documented needs, thereby creating participant buy-in and commitment to project work.

Nurses constitute the largest sector of the healthcare workforce within the United States, therefore it is critical that nurses receive appropriate training in disaster nursing. Consequently, efforts are needed to develop, communicate, and deliver these competencies, as well as the education and training which supports the development of these competencies. Over the past year, CERMUSA conducted the study "Strengthening Nursing Curriculum to Support Humanitarian Assistance and Disaster Preparedness Competencies". This study evolved over a period of time and is based upon prior research, review of the literature, and feedback from key stakeholders at the local, state, and national level that indicates significant gaps in knowledge, skills, and attitudes among medical providers who respond to disasters. This study aims to (1) identify and validate evidence-based nursing competencies for military disaster response and the educational curriculum to support these competencies; (2) identify and validate continuing nursing education and training curriculum which supports evidence-based nursing competencies for military disaster response; and (3) identify and test technology that can be used in the delivery of disaster preparedness education. It also explored how reliable alternative, technologically-enhanced mobile educational content delivery models are in delivering educational content. Phase 1 of this research (identification and testing of technology that can be used in the delivery of disaster preparedness education) was completed in FY10. During Phase 1, changes in knowledge, skills,, and attitudes among nursing students as a result of disaster preparedness education and training received in their core nursing curriculum were evaluated. Furthermore, the effectiveness of utilizing a mobile learning platform in the delivery of disaster preparedness education and training was measured. This was done through the use of a pre-test/post-test format. In addition, four mobile learning platforms (Apple iPhone, Apple iPad with cover, Apple iPad without cover, and Motorola Android) were evaluated via an online Mobile Learning Platform Technology Evaluation tool. The evaluation criteria included the following:

- Mobile device manufacturer and type
- Participant's age
- Participant's gender
- Do you use any mobile and/or handheld device(s)?
- If you use a handheld device(s) what do you use?
- If you use a handheld device(s), what applications do you use the device for?
- How many hours per day do you use your mobile device(s)?

- Using the following scale, rate the device(s) you tested
- Using the following scale, rate the device(s) you tested
- This device costs (device price). For its abilities, is this price Too Low, Just About Right, Too High?
- What did you like about this device?
- What did you dislike about this device?
- What would you change about this device?
- Would you recommend this device to others?
- Additional comments
- Device price

Through the use of the Mobile Learning Platform Technology Evaluation tool:

- End-user requirements were identified
- Technical procedures for establishing and disseminating information were identified
- Technical barriers to offering the program in rural, remote, and underserved areas were identified
- The knowledge gains of the study subjects who utilize the content implemented in the research were identified

This study is relevant to the field of nursing and nursing education as it relates to disaster preparedness competencies. As trusted professionals, nurses are looked to in disasters as leaders of efforts to promote effective care to victims. The need for research into the development and evaluation of a humanitarian assistance and disaster response plan for military and civilian nurses is important to help them gain a better understanding of their role, as well as to enhance the value of the mission. Based on the data generated from this study, CERMUSA anticipates the dissemination of nursing competencies for military disaster response to the Tri-Services (Navy, Army, and Air Force). In addition, the results of this study may provide evidence for deploying other emerging learning technologies as tools for future phases of this effort.

Moreover, this study can serve to inform us about changes that might be important in undergraduate and graduate nursing curriculum in order to better prepare the workforce for all-hazards response. When the data has been analyzed, additional funds will be sought to support future research and/or implementation of curriculum changes. Also, a manuscript will be developed and submitted for publication to an appropriate peer-reviewed journal.

Saint Francis University's Center of Excellence for Remote and Medically Under-Served Areas (CERMUSA)

Nurse Education – CERMUSA
FY10 Annual Report
(September 12, 2011 to September 11, 2012)

Protocol Title:	Strengthening Nursing Curriculum to Support Humanitarian Assistance and Disaster Preparedness Competencies
Protocol No.:	10-TATOP110-10
Date:	October 2012

Principal Investigator
Brenda Guzic, MA, MHSc, BSW, RN, Assistant Director for Telehealth

Introduction

The United States military has long been aware of the critical importance of training medical personnel for mass casualty events that occur on the battlefield; and awareness of the need for training in disaster response and preparedness in both the military and civilian venues is higher than ever. The media has allowed us to witness the grim realities of the devastation and loss of life that occur when disasters strike the United States and other nations. The casualties generated by such disasters can overwhelm healthcare facilities and first responder communities. They can also overwhelm our military forces that are placed in positions of response to major life threatening events and disasters involving significant human casualties. Ultimately, the nature of the response can save or jeopardize lives.

The value of national competencies and curricula in disaster health is at the heart of Homeland Security Presidential Directive 21 (HSPD-21) "Public Health and Medical Preparedness" of 18 October 2007. This directive reinforces the need for coordinated disaster response and competent medical intervention in order to save lives. The directive states that it is critical that we establish a strategic vision that will enable a level of public health and medical preparedness sufficient to address a range of possible disasters.

Nurses constitute the largest sector of the healthcare workforce within the United States and will, with certainty, be on the front lines of any disaster response (Veenema, 2006). Since nurses make up the largest portion of the healthcare workforce in the country, it is critical that nurses in all specialty areas are trained in disaster nursing (American Public Health Association, 2008). Much of the literature concerning competencies for disaster response consists of generated lists of competencies that have not been validated (Daily, Padjen, Birnbaum, 2010). Further efforts are needed to develop and communicate the evidence-base surrounding these competencies, as well as the education and training which supports the development of these competencies.

Meeting the numerous and varied needs of populations affected by disasters requires a prepared healthcare system and personnel (Daily, Padjen, Birmbaum, 2010). Due to the diversity of medical personnel in terms of education, training, and licensure requirements, it is important to examine profession-specific competencies in order to understand the gaps which exist. Since nurses perform strategic research, administrative, and practice functions in emergency planning and mass casualty events (Stein, 2008), it makes sense to begin to develop a better understanding of specific competencies of this group in order to develop more effective and targeted education and training methods. According to Gebbie & Qureshi (2002), "Although nurses may agree that there's a need for basic competencies in disaster preparedness and response in addition to the usual clinical skills, such training is not part of the required undergraduate curricula at most U.S. schools of nursing, and there is surprisingly little in the literature that addresses the role of nursing in this regard.". There is a lack of clear data supporting nursing practice in response to the actual or potential health problems associated with humanitarian assistance and disaster response. We must continue to address gaps in our knowledge with research that can then translate into practice.

This study evolved over a period of time and is based upon prior research, review of the literature, and feedback from the key stakeholders at the local, state, and national level that indicates significant gaps in knowledge, skills and attitudes among medical providers who respond to disasters. The historical and experiential context further supports its exploration. The International Council of Nurses (2006) position statement on nurses and disaster preparedness states, "It is important for all nursing leaders to incorporate disaster preparedness awareness in educational programs at the pre-registration and post-basic levels and provide continuing education to ensure a sound knowledge base, skill development, and ethical framework for practice." It is anticipated that the knowledge generated by this study will inform nursing education and drive curriculum decisions relative to disaster response for this profession.

The goal of this research is to evaluate changes in knowledge, skills, and attitudes among nursing students as a result of education and training. It also will explore how reliable alternative, technologically-enhanced mobile educational content delivery models are in delivering educational content. Future phases of the study are expected to provide data supporting specific nursing competencies in disaster preparedness and response.

Body

Phase 1 of this research evaluated changes in knowledge, skills, and attitudes among nursing students as a result of disaster preparedness education and training received in their core nursing curriculum. This was done through the use of a pre-test/post-test format and results of this evaluation are depicted in Tables 1 & 2. In addition, the effectiveness of utilizing a mobile learning platform in the delivery of disaster preparedness education and training was evaluated. This was done via an online Mobile Learning Platform Technology Evaluation tool (Appendix B). Four mobile learning platforms (Apple iPhone, Apple iPad with cover, Apple iPad without cover, and Motorola Android) were evaluated and evaluation criteria included the following:

- Mobile device manufacturer and type
- Participant's age
- Participant's gender
- Do you use any mobile and/or handheld device(s)?
- If you use a handheld device(s) what do you use?
- If you use a handheld device(s), what applications do you use the device for?
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Through the use of the Mobile Learning Platform Technology Evaluation tool:

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- Technical procedures for establishing and disseminating information were identified
- Technical barriers to offering the program in rural, remote, and underserved areas were identified
- The knowledge gains of the study subjects who utilize the content implemented in the research were identified

Pre-test/Post-Test Variance

Participant #	Pre-Test	Post Test	Difference
Nurse1	12	10	-2
Nurse2	14	19	+5
Nurse3	11	16	+5
Nurse4	11	15	+4
Nurse5	10	15	+5
Nurse6	17	19	+2
Nurse7	12	16	+4
Nurse8	8	17	+9
Nurse9	13	11	-2
Nurse10	8	20	+12
Nurse11	11	18	+7
Nurse12	13	18	+5
Nurse13	9	9	No Change
Nurse14	15	19	+4
Nurse15	13	10	-3
Nurse16	5	5	No Change
Nurse17	11	12	+1
Nurse18	8	14	+6
Nurse19	11	16	+5
Nurse20	11	18	+7

Table 1

Quiz Information

Quiz name	Disaster Preparedness Post-Test
Course name	Nurse Disaster Preparedness
Number of complete graded first attempts	20
Total number of complete graded attempts	59
Average grade of first attempts	71%
Average grade of all attempts	75%
Median grade (for first attempts)	76%
Standard deviation (for first attempts)	19%
Score distribution skewness (for first attempts)	-0.86
Score distribution kurtosis (for first attempts)	0.03
Coefficient of internal consistency (for first attempts)	82%
Error ratio (for first attempts)	42%
Standard error (for first attempts)	8%

Table 2

Key Research Accomplishments

- The end-users' (nursing students) were recruited and consented (completed 2012)
- Four technologies (Motorola Android, Apple iPod, Apple iPad with cover, Apple iPad without cover) were selected and used in delivering the distance education module to the students (completed 2012)
- The four technologies were evaluated by the student participants via a technology evaluation survey and results were tabulated [Appendices C, D, E, & F] (completed 2012)
- An online course management system was used to administer the pre-test, didactic course content, post-test, and survey (completed 2012)
- The knowledge gains of the study subjects were measured via comparisons between the online pre-test and post-test results [Table 1] (completed 2012)
- Disaster Nursing Competencies Survey (phase II) developed (completed 2012)
- Nurse Disaster Preparedness Advisory Board, made up of disaster nursing subject matter experts from across the country, was convened to review the survey and make recommendations for revisions (completed 2012)
- Disaster Nursing Competencies Survey distributed via Qualtrics Survey software to Deans of Nursing (Bachelor of Nursing programs) using lists from the National League for Nursing Accrediting Commission and Commission on Collegiate Nursing Education (ongoing 2012)
- Results from Competencies Survey (phase II) will be tabulated and recommendations will be made for changes to nursing curriculum that are reflective of the findings (ongoing 2012)

The importance of military disaster medicine stems to the mid-1800's when Florence Nightingale, also known as the mother of modern nursing, led an expedition of volunteer nurses to aid wounded and ill soldiers from the Crimean War (Military Nurse History, n.d.). Although military nursing has improved dramatically over the years, the need for continued education and research is of vital importance. The traditional scope of war, as well as the role of a military nurse, has changed dramatically over the past century. Due to "high tech" conflicts and wars against terrorism being fought around the globe, nurses are being required to expand their knowledge base to include the cultural awareness of host nations, health values and beliefs, and an understanding of the mission port health delivery systems. This is in addition to their role of caring for the sick and injured.

Military nurses are routinely being deployed for humanitarian assistance and disaster response missions throughout the world. To prepare for future military humanitarian missions, nurses turn to resources and lessons learned from past humanitarian assistance and disaster response missions. However, accounts by military nurses show that the content of such after-action reports rarely contain items related to nursing practice and that they specifically lack detailed information that would be helpful for nurses to improve future performances (Almonte, 2009). The need for research into the development and evaluation of a humanitarian assistance and disaster response plan for military nurses is important to help them gain a better understanding of their role, as well as to enhance the value of the mission.

Reportable Outcomes

Phase I of this study has been completed. Analysis of data as it relates to the knowledge gains of the study subjects can be found in Table 1 and the results of the technology evaluations can be found in Appendices C, D, E, & F. For Phase 2 a Disaster Nursing Competencies Survey has been developed and distributed via Qualtrics Survey software to Deans of Nursing (Bachelor of Nursing programs) across the United States. Results from the Competencies Survey will be tabulated and recommendations will be made for changes to nursing curriculum that is reflective of the findings. When data has been analyzed additional funds will be sought to support future research and/or implementation of curriculum changes. Year-to-date no manuscripts, abstracts, or presentations have been generated. However, a manuscript will be developed and submitted for publication to an appropriate peer-reviewed journal upon completion of the study.

Conclusion

This study is relevant to the field of nursing and nursing education as it relates to disaster preparedness competencies. As trusted professionals nurses are looked to in disasters as leaders of efforts to promote effective care to victims. The need for research into the development and evaluation of a humanitarian assistance and disaster response plan for military and civilian nurses is important to help them gain a better understanding of their role, as well as to enhance the value of the mission. This study can serve to inform us about changes that might be important in undergraduate and graduate nursing curriculum in order to better prepare the workforce for all-hazards response.

Based on the data generated from this study, the Center of Excellence for Remote and Medically Under-Served Areas (CERMUSA) anticipates the dissemination of nursing competencies for military disaster response to the Tri-Services (Navy, Army, and Air Force). In addition, the results of this study may provide evidence for deploying other emerging learning technologies as tools for future phases of this effort. These tools may include the integration of medical simulation (on-site and at a distance) and interactive virtual worlds. With the growing robustness of cloud-based technologies and individual device processing power (i.e. tablet computers, smart phones) content could be transformed into increasingly realistic-yet-accessible distribution methodologies, including interactive games and online scenarios. These efforts will likely build upon CERMUSA's previous documented successes in these fields (Medical Simulation at a Distance) and the knowledge base of our Principal Investigators, Associate Investigators/Subject Matter Experts, and consultants. Based on the results of this study, mobile content distribution could be used en masse to prepare medical staffs for deployment. A sample model would involve distributing pre-loaded mobile devices to these individuals prior to deployment to enable them to complete preparatory materials as time allowed. For example, a civilian reservist could view training materials on a handheld device while waiting for immunizations at a doctor's office. Additionally, these devices could be carried along during deployment to serve as digital handbooks or continued preparation/adaptation while in-theater. In addition, results may provide key insights into competencies required of the broader medical department staff and provide the basis for enhancing inter-professional and team-based training.

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Daily E, Padjen P, Birnbaum M. (2010). A review of competencies developed for disaster healthcare providers: limitations of current processes and applicability. Retrieved March 2, 2012 from http://www.ncbi.nlm.nih.gov/pubmed/21053183

Gebbie, K. M., & Qureshi, K. (2002). Emergency and disaster preparedness: Core competencies for nurses. American Journal of Nursing, 102, 46-51.

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Military Nurse History, (n.d.). Retrieved February 13, 2012 from http://www.military-nurse.com/militarynursehistory.html

Stein, M. (2008). When disaster strikes. Chelsea Green Publishing. White River Junction, VT.

Veenema, T. (2006). Expanding educational opportunities in disaster response and emergency preparedness for nurses. Disaster Response Education, 27 (2), 93 – 99.

Appendices

A. Pre-test/Post-test
B. Mobile Learning Platform Technology Evaluation
C. Android Evaluation Results
D. iPad Evaluation Results
E. iPad (With Cover) Evaluation Results
F. iPod Evaluation Results

Appendix A

Pretest/Posttest

Stanhope: Foundations of Nursing in the Community: Community-Oriented Practice, 3rd Edition

Chapter 14: Disaster Management

Test Bank

MULTIPLE CHOICE

Which countries bear the greatest burden of disasters?
a. Arid regions that are prone to drought
b. Developing countries with limited resources
c. Industrialized countries with much to lose
d. Water-boundary regions that are prone to floods and hurricanes

ANS: B
Disasters create the most devastation in developing countries, where the death rate is up to 12 times higher than in developed countries. The people of low socioeconomic status suffer the most because their houses are less sturdy and they have fewer resources and less means of social security.

DIF: Cognitive Level: Knowledge REF: p. 253

Which of the following defines a disaster?
a. Any event that results in multiple deaths
b. Devastation that cannot be relieved without assistance
c. Devastation that covers a broad geographic area
d. When the event results in multiple injuries and deaths as well as property damage

ANS: B
A disaster is any human-made or natural event that causes destruction and devastation that cannot be relieved without assistance.

DIF: Cognitive Level: Knowledge REF: p. 254

What is the purpose of disaster planning?
a. To increase global stability
b. To improve overall community functioning
c. To manage response to disasters
d. To prevent disasters from occurring

ANS: C

Appendix B

Mobile Learning Platform
Technology Evaluation Tool

Please complete the questionnaire by selecting a response to each question. You may refuse to answer any item without repercussion. You may also withdrawal from completing this questionnaire at any time.

By completing this questionnaire, I indicate my consent to participate in this research study. I understand confidentiality will be maintained.

Mobile Device Manufacturer and Type (i.e. Apple iPod): _____

General Questions:

1. **What is your age? _____18 to 22, _____23 to 27, _____28 to 32, ____33 and above**
2. **What is your gender? _____M _____F**
3. **Do you use any mobile and/or hand held device(s) such as a smartphone, iPad, iPod, etc.**
    a. ___Yes ___No
    b. If **yes** please specify what device(s) you use:
4. **If you answered YES to question #3: What applications do you use the device(s) for? (Please select all that apply)**
    a. E-mail
    b. Social networking (i.e. Facebook)
    c. Text messaging
    d. Surfing the web
    e. Watching videos
    f. Listening to music
    g. Other(s) (please explain)_____
5. **How many hours per day do you use your mobile devices(s)?**
    a. 1 hour or less
    b. 2-4 hours
    c. 4-6 hours
    d. 6-8 hours
    e. 8 hours or more

Using the following scale please rate the device you tested:

- 1 is very dissatisfied
- 2 is somewhat dissatisfied
- 3 is not sure
- 4 is somewhat satisfied
- 5 is very dissatisfied

1. Overall Ease of Use	1	2	3	4	5
2. Overall Size	1	2	3	4	5
3. Display Layout	1	2	3	4	5
4. Battery life of the device	1	2	3	4	5
5. Overall portability of the device	1	2	3	4	5
1. Weight of the device	1	2	3	4	5
2. Keyboard arrangement on the device (i.e. touchscreen keyboard)	1	2	3	4	5
3. Keyboard size on the device	1	2	3	4	5
4. Sensitivity of the keyboard	1	2	3	4	5
5. Usefulness of "touch screen" keyboard compared to a physical keyboard	1	2	3	4	5
6. Size of the touchscreen	1	2	3	4	5
7. Sensitivity of the touchscreen	1	2	3	4	5
8. Readability of content on the screen	1	2	3	4	5
9. Webpage surfing and navigation	1	2	3	4	5
10. Application (app) loading and speed	1	2	3	4	5
11. Ability to find necessary applications (apps) on the device	1	2	3	4	5
12. Application (app) loading and speed	1	2	3	4	5
13. Is this device faster to use than *traditional learning methods?	YES		NO		
14. Is this device more efficient to use than *traditional learning methods?	YES		NO		
15. Is this device more enjoyable to use than *traditional learning methods?	YES		NO		
16. Did you prefer accessing the content on this device better than over a traditional computer? (i.e. desktop/laptop)	YES		NO		
17. This device costs $_____. For its abilities do you find this price too	Too Low	Just about right		Too High	
18. What did you like about this device?					

19. What did you dislike about this device?	
20. What would you change about this device?	
21. Would you recommend this device to others?	YES NO Explain:
22. Additional comments:	

*Traditional learning methods:

- The instructor is in control of the learning environment;
- Learning is delivered in the form of lectures;
- Students have 'knowledge holes' that need to be filled with information;
- Learning primarily takes place within the classroom;
- Content is not always learned in the context of actual situations (Traditional Learning, 2002).

Reference:

Traditional Learning (2002). Retrieved February 13, 2012 from http://ehlt.flinders.edu.au/education/DLiT/2002/environs/scott/tradteac.htm

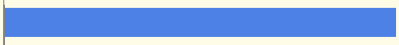
Appendix C

1. Mobile Device Manufacturer and Type

#	Answer		Response	%
3	Apple iPad		0	0%
4	Apple iPad with Cover		0	0%
2	Apple iPod		0	0%
1	Motorola Android		20	100%
	Total		20	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	20

2. What is your age?

#	Answer		Response	%
1	18 to 22		17	85%
2	23 to 27		3	15%
3	28 to 32		0	0%
4	33 and above		0	0%
	Total		20	100%

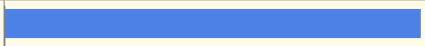
Statistic	Value
Min Value	1
Max Value	2
Mean	1.15
Variance	0.13
Standard Deviation	0.37
Total Responses	20

3. What is your gender?

#	Answer		Response	%
1	Male		3	16%
2	Female		16	84%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.84
Variance	0.14
Standard Deviation	0.37
Total Responses	19

4. Do you use any mobile and/or handheld devices(s)

#	Answer		Response	%
1	Yes		18	90%
2	No		2	10%
	Total		20	100%

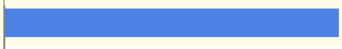
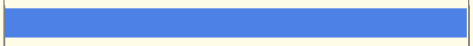
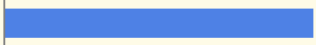
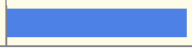
Statistic	Value
Min Value	1
Max Value	2
Mean	1.10
Variance	0.09
Standard Deviation	0.31
Total Responses	20

5. If YES, please specify what device(s) you use

Text Response
smartphone iPod
Droid X, iPod touch, iPad
iPod touch, iPhone
iPod touch
smartphone
android
droid phone, iPod touch
iPhone
iPod, iPhone
iPhone
iPhone
iPhone
iPod touch, Android smart phone
iPhone
iPhone, iPod, smartphone

Statistic	Value
Total Responses	15

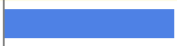
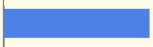
6. If you answered YES to question #4, What applications do you use the devices for?

#	Answer		Response	%
1	E-mail		13	72%
2	Social Networking (i.e. Facebook)		15	83%
3	Text messaging		18	100%
4	Surfing the web		16	89%
5	Watching videos		12	67%
6	Listening to music		15	83%
7	Other		7	39%

Other
Games
apps
Games
pinterest, games
Other apps
Photography
pinterest, games

Statistic	Value
Min Value	1
Max Value	7
Total Responses	18

7. How many hours per day do you use your mobile device(s)?

#	Answer		Response	%
1	1 hour or less		1	5%
2	2-4 hours		7	37%
3	4-6 hours		6	32%
4	6-8 hours		2	11%
5	8 hours or more		3	16%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	5
Mean	2.95
Variance	1.39
Standard Deviation	1.18
Total Responses	19

8. Using the following scale please rate the device you tested:

#	Question	Very dissatisfied	Somewhat dissatisfied	Not sure	Somewhat satisfied	Very satisfied	Responses	Mean
1	Overall ease of use	0	1	1	7	11	20	4.40
2	Overall size	0	0	0	5	15	20	4.75
3	Display layout	0	0	0	7	13	20	4.65
4	Battery life of the device	0	0	9	6	4	19	3.74
5	Overall portability of the device	0	0	1	13	6	20	4.25
6	Weight of the device	0	0	2	11	7	20	4.25
7	Keyboard arrangement on the device (i.e. touchscreen keyboard	0	1	2	9	8	20	4.20
8	Keyboard size on the device	0	2	1	7	9	19	4.21
9	Sensitivity of the keyboard	1	2	1	7	9	20	4.05
10	Usefulness of "touch screen" keyboard compared to a physical keyboard	1	3	2	8	6	20	3.75
11	Size of the touchscreen	0	0	0	9	11	20	4.55
12	Sensitivity of the touchscreen	1	1	1	7	10	20	4.20
13	Readability of content on the	0	1	0	5	12	18	4.56

	screen							
14	Webpage surfing and navigation	0	1	3	11	4	19	3.95
15	Application (app) loading and speed	2	9	1	3	5	20	3.00
16	Ability to find necessary applications on the device	1	1	1	9	8	20	4.10
17	Application loading and speed	2	10	1	4	3	20	2.80

Statistic	Overall ease of use	Overall size	Display layout	Battery life of the device	Overall portability of the device	Weight of the device	Keyboard arrangement on the device (i.e. touchscreen keyboard	Keyboard size on the device	Sensitivity of the keyboard	Usefulness of "touch screen" keyboard compared to a physical keyboard	Size of the touchscreen	Sensitivity of the touchscreen	Readability of content on the screen	Webpage surfing and navigation	Application (app) loading and speed	Ability to find necessary applications on the device	Application loading and speed
Min Value	2	4	4	3	3	3	2	2	1	1	4	1	2	2	1	1	1
Max Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mean	4.40	4.75	4.65	3.74	4.25	4.25	4.20	4.21	4.05	3.75	4.55	4.20	4.56	3.95	3.00	4.10	2.80
Variance	0.67	0.20	0.24	0.65	0.30	0.41	0.69	0.95	1.42	1.46	0.26	1.22	0.61	0.61	2.11	1.15	1.75
Standard Deviation	0.82	0.44	0.49	0.81	0.55	0.64	0.83	0.98	1.19	1.21	0.51	1.11	0.78	0.78	1.45	1.07	1.32
Total Responses	20	20	20	19	20	20	20	19	20	20	20	20	18	19	20	20	20

9. Using the following scale please rate the device you tested:

#	Question	Yes	No	Responses	Mean
1	Is this device faster to use than traditional learning methods?	11	9	20	1.45
2	Is this device more efficient to use than traditional learning methods?	17	3	20	1.15
3	Is this device more enjoyable to use than traditional learning methods?	19	1	20	1.05
4	Did you prefer accessing the content on this device better than over a traditional computer	11	8	19	1.42

Statistic	Is this device faster to use than traditional learning methods?	Is this device more efficient to use than traditional learning methods?	Is this device more enjoyable to use than traditional learning methods?	Did you prefer accessing the content on this device better than over a traditional computer
Min Value	1	1	1	1
Max Value	2	2	2	2
Mean	1.45	1.15	1.05	1.42
Variance	0.26	0.13	0.05	0.26
Standard Deviation	0.51	0.37	0.22	0.51
Total Responses	20	20	20	19

10. This device costs (Device Price). For its abilities, is this price:

#	Answer		Response	%
1	Too low		0	0%
2	Just about right		4	21%
3	Too high		15	79%
	Total		19	100%

Statistic	Value
Min Value	2
Max Value	3
Mean	2.79
Variance	0.18
Standard Deviation	0.42
Total Responses	19

11. What did you like about this device?

Text Response
size
size
size, screen clarity, light weight
size, weight, this one was the best of all devices
size
size
font size, easiness to use the touchscreen
screen size, fairly easy to use
Screen was perfect size: not a lot of zooming was necessary
size
Size was bigger than iPod
Big and easy to use
Perfect size
Ability to maintain speed with multiple apps and websites open
Size
size
Good size
size
Size and design
size

Statistic	Value
Total Responses	20

12. What did you dislike about this device?

Text Response
too slow, kind of heavy
portability
keyboard sensitivity, small buttons, slow
nothing
slow speed
connectivity, touchscreen sensitivity
speed at times was slow
Since my first time using, did not know whre everything was
slow loading time
slow
Did not like keyboard and very sensitive
For some pages you have to turn vertically to read the page, kept turning itself off
Slower than Apples
Keyboard was too sensitive, I clicked on something and it took me somewhere else
slow
Touchscreen was not sensitive enough: had to tap multiple times
speed, sensitivity, a little awkward
price
It was so slow, took me 5 minutes to log in
randomly shuts off

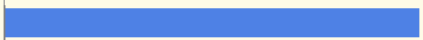
Statistic	Value
Total Responses	20

13. What would you change about this device?

Text Response
nothing
speed
nothing
slow speed
connectivity, touchscreen sensitivity
price if possible
Loading speed of application
Nothing on device, just better internet accesability
speed
Keep it from locking so quickly
Nothing
Making the words slightly bigger @ the screen before making it bigger with your fingers
speed
speed
slow internet
speed/provider
price

Statistic	Value
Total Responses	17

14. Would you recommend this device to others?

#	Answer		Response	%
1	Yes		18	90%
2	No		2	10%
	Total		20	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.10
Variance	0.09
Standard Deviation	0.31
Total Responses	20

15. Additional comments:

Text Response
I really like this device!
The size and weight were good. After a while of usage, it would no longer let me access information.

Statistic	Value
Total Responses	2

16. Device Price

Value	Total
430	20

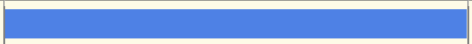
Appendix D

1. Mobile Device Manufacturer and Type

#	Answer		Response	%
3	Apple iPad		9	100%
4	Apple iPad with Cover		0	0%
2	Apple iPod		0	0%
1	Motorola Android		0	0%
	Total		9	100%

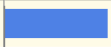
Statistic	Value
Min Value	3
Max Value	3
Mean	3.00
Variance	0.00
Standard Deviation	0.00
Total Responses	9

2. What is your age?

#	Answer		Response	%
1	18 to 22		9	100%
2	23 to 27		0	0%
3	28 to 32		0	0%
4	33 and above		0	0%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	9

3. What is your gender?

#	Answer		Response	%
1	Male		2	22%
2	Female		7	78%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.78
Variance	0.19
Standard Deviation	0.44
Total Responses	9

4. Do you use any mobile and/or handheld devices(s)

#	Answer		Response	%
1	Yes		8	89%
2	No		1	11%
	Total		9	100%

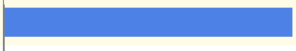
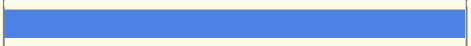
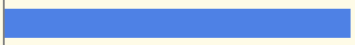
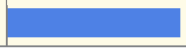
Statistic	Value
Min Value	1
Max Value	2
Mean	1.11
Variance	0.11
Standard Deviation	0.33
Total Responses	9

5. If YES, please specify what device(s) you use

Text Response
Droid X, iPod touch, iPad
iPod touch
smartphone
iPhone
iPod touch, android smartphone

Statistic	Value
Total Responses	5

6. If you answered YES to question #4, What applications do you use the devices for?

#	Answer		Response	%
1	E-mail		5	63%
2	Social Networking (i.e. Facebook)		7	88%
3	Text messaging		8	100%
4	Surfing the web		7	88%
5	Watching videos		6	75%
6	Listening to music		6	75%
7	Other		3	38%

Other
pinterest, games
pinterest, games
apps, games

Statistic	Value
Min Value	1
Max Value	7
Total Responses	8

7. How many hours per day do you use your mobile device(s)?

#	Answer		Response	%
1	1 hour or less		1	11%
2	2-4 hours		3	33%
3	4-6 hours		1	11%
4	6-8 hours		3	33%
5	8 hours or more		1	11%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	5
Mean	3.00
Variance	1.75
Standard Deviation	1.32
Total Responses	9

8. Using the following scale please rate the device you tested:

#	Question	Very dissatisfied	Somewhat dissatisfied	Not sure	Somewhat satisfied	Very satisfied	Responses	Mean
1	Overall ease of use	0	0	0	0	9	9	5.00
2	Overall size	0	0	0	4	5	9	4.56
3	Display layout	0	0	0	0	9	9	5.00
4	Battery life of the device	0	0	2	2	5	9	4.33
5	Overall portability of the device	0	3	0	2	4	9	3.78
6	Weight of the device	0	2	1	4	2	9	3.67
7	Keyboard arrangement on the device (i.e. touchscreen keyboard	0	0	0	1	8	9	4.89
8	Keyboard size on the device	0	0	0	0	9	9	5.00
9	Sensitivity of the keyboard	0	0	0	0	9	9	5.00
10	Usefulness of "touch screen" keyboard compared to a physical keyboard	0	0	0	3	6	9	4.67
11	Size of the touchscreen	0	0	0	2	7	9	4.78
12	Sensitivity of the touchscreen	0	0	0	0	9	9	5.00
13	Readability of content on the	0	0	0	0	9	9	5.00

	screen							
14	Webpage surfing and navigation	0	0	1	1	6	8	4.63
15	Application (app) loading and speed	0	0	2	3	3	8	4.13
16	Ability to find necessary applications on the device	0	0	1	1	6	8	4.63
17	Application loading and speed	0	2	0	2	4	8	4.00

Statistic	Overall ease of use	Overall size	Display layout	Battery life of the device	Overall portability of the device	Weight of the device	Keyboard arrangement on the device (i.e. touchscreen keyboard	Keyboard size on the device	Sensitivity of the keyboard	Usefulness of "touch screen" keyboard compared to a physical keyboard	Size of the touchscreen	Sensitivity of the touchscreen	Readability of content on the screen	Webpage surfing and navigation	Application (app) loading and speed	Ability to find necessary applications on the device	Application loading and speed
Min Value	5	4	5	3	2	2	4	5	5	4	4	5	5	3	3	3	2
Max Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mean	5.00	4.56	5.00	4.33	3.78	3.67	4.89	5.00	5.00	4.67	4.78	5.00	5.00	4.63	4.13	4.63	4.00
Variance	0.00	0.28	0.00	0.75	1.94	1.25	0.11	0.00	0.00	0.25	0.19	0.00	0.00	0.55	0.70	0.55	1.71
Standard Deviation	0.00	0.53	0.00	0.87	1.39	1.12	0.33	0.00	0.00	0.50	0.44	0.00	0.00	0.74	0.83	0.74	1.31
Total Responses	9	9	9	9	9	9	9	9	9	9	9	9	9	8	8	8	8

9. Using the following scale please rate the device you tested:

#	Question	Yes	No	Responses	Mean
1	Is this device faster to use than traditional learning methods?	5	2	7	1.29
2	Is this device more efficient to use than traditional learning methods?	8	0	8	1.00
3	Is this device more enjoyable to use than traditional learning methods?	8	0	8	1.00
4	Did you prefer accessing the content on this device better than over a traditional computer	7	1	8	1.13

Statistic	Is this device faster to use than traditional learning methods?	Is this device more efficient to use than traditional learning methods?	Is this device more enjoyable to use than traditional learning methods?	Did you prefer accessing the content on this device better than over a traditional computer
Min Value	1	1	1	1
Max Value	2	1	1	2
Mean	1.29	1.00	1.00	1.13
Variance	0.24	0.00	0.00	0.13
Standard Deviation	0.49	0.00	0.00	0.35
Total Responses	7	8	8	8

10. This device costs (Device Price). For its abilities, is this price:

#	Answer		Response	%
1	Too low		0	0%
2	Just about right		4	50%
3	Too high		4	50%
	Total		8	100%

Statistic	Value
Min Value	2
Max Value	3
Mean	2.50
Variance	0.29
Standard Deviation	0.53
Total Responses	8

11. What did you like about this device?

Text Response
Fun to use, size, easy use of touch screen
ease of use, size/readability of words
size
It was really easy to use and the touch screen worked very well
The size, it was the best out of all 3
The readability of the device
Size of screen
everything but cost

Statistic	Value
Total Responses	8

12. What did you dislike about this device?

Text Response
slow internet, a little heavy
weight, too big to use
lack of portability
youtube didnt work and the loading speed was a little slow
really liked it overall
slower than the iPod
slowness
cost

Statistic	Value
Total Responses	8

13. What would you change about this device?

Text Response
make i little smaller and lighter
slightly smaller
nothing
nothing
speed of the device
don't use the wifi

Statistic	Value
Total Responses	6

14. Would you recommend this device to others?

#	Answer		Response	%
1	Yes		7	100%
2	No		0	0%
	Total		7	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	7

15. Additional comments:

Text Response
loved the screen size
overall, I really like this device

Statistic	Value
Total Responses	2

16. Device Price

Value	Total
400	9

Appendix E

1. Mobile Device Manufacturer and Type

#	Answer		Response	%
3	Apple iPad		0	0%
4	Apple iPad with Cover		9	100%
2	Apple iPod		0	0%
1	Motorola Android		0	0%
	Total		9	100%

Statistic	Value
Min Value	4
Max Value	4
Mean	4.00
Variance	0.00
Standard Deviation	0.00
Total Responses	9

2. What is your age?

#	Answer		Response	%
1	18 to 22		6	67%
2	23 to 27		3	33%
3	28 to 32		0	0%
4	33 and above		0	0%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.33
Variance	0.25
Standard Deviation	0.50
Total Responses	9

3. What is your gender?

#	Answer		Response	%
1	Male		1	11%
2	Female		8	89%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.89
Variance	0.11
Standard Deviation	0.33
Total Responses	9

4. Do you use any mobile and/or handheld devices(s)

#	Answer		Response	%
1	Yes		8	89%
2	No		1	11%
	Total		9	100%

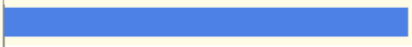
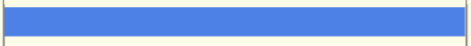
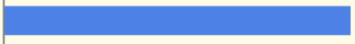
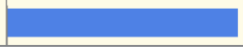
Statistic	Value
Min Value	1
Max Value	2
Mean	1.11
Variance	0.11
Standard Deviation	0.33
Total Responses	9

5. If YES, please specify what device(s) you use

Text Response
iPod touch, iPhone
smartphone, iPod
iPhone
iPhone
smartphone, iPod touch
iPod, iPhone

Statistic	Value
Total Responses	6

6. If you answered YES to question #4, What applications do you use the devices for?

#	Answer		Response	%
1	E-mail		7	88%
2	Social Networking (i.e. Facebook)		6	75%
3	Text messaging		8	100%
4	Surfing the web		7	88%
5	Watching videos		6	75%
6	Listening to music		7	88%
7	Other		4	50%

Other
Games
Photography
apps
Games

Statistic	Value
Min Value	1
Max Value	7
Total Responses	8

7. How many hours per day do you use your mobile device(s)?

#	Answer		Response	%
1	1 hour or less		0	0%
2	2-4 hours		3	33%
3	4-6 hours		4	44%
4	6-8 hours		0	0%
5	8 hours or more		2	22%
	Total		9	100%

Statistic	Value
Min Value	2
Max Value	5
Mean	3.11
Variance	1.36
Standard Deviation	1.17
Total Responses	9

8. Using the following scale please rate the device you tested:

#	Question	Very dissatisfied	Somewhat dissatisfied	Not sure	Somewhat satisfied	Very satisfied	Responses	Mean
1	Overall ease of use	0	0	0	3	6	9	4.67
2	Overall size	0	0	0	8	1	9	4.11
3	Display layout	0	0	0	1	8	9	4.89
4	Battery life of the device	0	0	3	3	3	9	4.00
5	Overall portability of the device	0	1	1	6	1	9	3.78
6	Weight of the device	0	2	0	5	2	9	3.78
7	Keyboard arrangement on the device (i.e. touchscreen keyboard	0	0	0	1	8	9	4.89
8	Keyboard size on the device	0	0	0	1	8	9	4.89
9	Sensitivity of the keyboard	0	0	0	1	8	9	4.89
10	Usefulness of "touch screen" keyboard compared to a physical keyboard	0	0	2	0	7	9	4.56
11	Size of the touchscreen	0	0	0	1	8	9	4.89
12	Sensitivity of the touchscreen	0	0	0	1	8	9	4.89
13	Readability of content on the	0	0	0	1	8	9	4.89

	screen							
14	Webpage surfing and navigation	0	0	0	3	4	7	4.57
15	Application (app) loading and speed	1	1	1	4	2	9	3.56
16	Ability to find necessary applications on the device	0	0	1	1	7	9	4.67
17	Application loading and speed	1	1	2	3	2	9	3.44

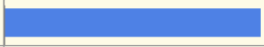
Statistic	Overall ease of use	Overall size	Display layout	Battery life of the device	Overall portability of the device	Weight of the device	Keyboard arrangement on the device (i.e. touchscreen keyboard	Keyboard size on the device	Sensitivity of the keyboard	Usefulness of "touch screen" keyboard compared to a physical keyboard	Size of the touchscreen	Sensitivity of the touchscreen	Readability of content on the screen	Webpage surfing and navigation	Application (app) loading and speed	Ability to find necessary applications on the device	Application loading and speed
Min Value	4	4	4	3	2	2	4	4	4	3	4	4	4	4	1	3	1
Max Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mean	4.67	4.11	4.89	4.00	3.78	3.78	4.89	4.89	4.89	4.56	4.89	4.89	4.89	4.57	3.56	4.67	3.44
Variance	0.25	0.11	0.11	0.75	0.69	1.19	0.11	0.11	0.11	0.78	0.11	0.11	0.11	0.29	1.78	0.50	1.78
Standard Deviation	0.50	0.33	0.33	0.87	0.83	1.09	0.33	0.33	0.33	0.88	0.33	0.33	0.33	0.53	1.33	0.71	1.33
Total Responses	9	9	9	9	9	9	9	9	9	9	9	9	9	7	9	9	9

9. Using the following scale please rate the device you tested:

#	Question	Yes	No	Responses	Mean
1	Is this device faster to use than traditional learning methods?	8	1	9	1.11
2	Is this device more efficient to use than traditional learning methods?	9	0	9	1.00
3	Is this device more enjoyable to use than traditional learning methods?	9	0	9	1.00
4	Did you prefer accessing the content on this device better than over a traditional computer	5	4	9	1.44

Statistic	Is this device faster to use than traditional learning methods?	Is this device more efficient to use than traditional learning methods?	Is this device more enjoyable to use than traditional learning methods?	Did you prefer accessing the content on this device better than over a traditional computer
Min Value	1	1	1	1
Max Value	2	1	1	2
Mean	1.11	1.00	1.00	1.44
Variance	0.11	0.00	0.00	0.28
Standard Deviation	0.33	0.00	0.00	0.53
Total Responses	9	9	9	9

10. This device costs (Device Price). For its abilities, is this price:

#	Answer		Response	%
1	Too low		0	0%
2	Just about right		4	44%
3	Too high		5	56%
	Total		9	100%

Statistic	Value
Min Value	2
Max Value	3
Mean	2.56
Variance	0.28
Standard Deviation	0.53
Total Responses	9

11. What did you like about this device?

Text Response
Clear screen, quick, easy
The large screen with the smallness of the device
Right size
portability
Screen size
Size of the screen
Easy to use and fun

Statistic	Value
Total Responses	7

12. What did you dislike about this device?

Text Response
Heavy, big
Cost and internet speed
Slow loading, sometimes it would select a different answer than what I pushed
price
Loading speed was slow, but I think it had more to do with the server
Might be hard to carry around due to size
Size and weight
Weight
Almost too big

Statistic	Value
Total Responses	9

13. What would you change about this device?

Text Response
Nothing
More direction on the webpage to find the tests. Recalibrate touch screen
Nothing
Nothing
No cover
Application loading and speed
Shrink it just a little

Statistic	Value
Total Responses	7

14. Would you recommend this device to others?

#	Answer		Response	%
1	Yes		9	100%
2	No		0	0%
	Total		9	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	9

15. Additional comments:

Text Response
If people are supposed to use the device en route to a disaster, some may get carsick reading. I know I would
No adjustment on screen size necessary

Statistic	Value
Total Responses	2

16. Device Price

Value	Total
400	9

Appendix F

1. Mobile Device Manufacturer and Type

#	Answer		Response	%
3	Apple iPad		0	0%
4	Apple iPad with Cover		0	0%
2	Apple iPod		19	100%
1	Motorola Android		0	0%
	Total		19	100%

Statistic	Value
Min Value	2
Max Value	2
Mean	2.00
Variance	0.00
Standard Deviation	0.00
Total Responses	19

2. What is your age?

#	Answer		Response	%
1	18 to 22		16	84%
2	23 to 27		3	16%
3	28 to 32		0	0%
4	33 and above		0	0%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.16
Variance	0.14
Standard Deviation	0.37
Total Responses	19

3. What is your gender?

#	Answer		Response	%
1	Male		3	16%
2	Female		16	84%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.84
Variance	0.14
Standard Deviation	0.37
Total Responses	19

4. Do you use any mobile and/or handheld devices(s)

#	Answer		Response	%
1	Yes		17	89%
2	No		2	11%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.11
Variance	0.10
Standard Deviation	0.32
Total Responses	19

5. If YES, please specify what device(s) you use

Text Response
smartphone
Droid X iPod touch, iPad
iPhone, iPod touch
iPod touch, adndroid smart phone
smartphone, iPod
iPhone
iPhone
iPhone
iPhone
iPhone
iPone, iPod, Droid smartphone
iPod touch
smartphone
iPod, iPhone

Statistic	Value
Total Responses	14

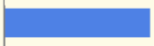
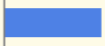
6. If you answered YES to question #4, What applications do you use the devices for?

#	Answer		Response	%
1	E-mail		13	76%
2	Social Networking (i.e. Facebook)		15	88%
3	Text messaging		17	100%
4	Surfing the web		16	94%
5	Watching videos		13	76%
6	Listening to music		16	94%
7	Other		8	47%

Other
apps
Games
Photographing
Games
pinterest, games
pinterest
Games, NCLEX Prep

Statistic	Value
Min Value	1
Max Value	7
Total Responses	17

7. How many hours per day do you use your mobile device(s)?

#	Answer		Response	%
1	1 hour or less		1	5%
2	2-4 hours		6	32%
3	4-6 hours		6	32%
4	6-8 hours		2	11%
5	8 hours or more		4	21%
	Total		19	100%

Statistic	Value
Min Value	1
Max Value	5
Mean	3.11
Variance	1.54
Standard Deviation	1.24
Total Responses	19

8. Using the following scale please rate the device you tested:

#	Question	Very dissatisfied	Somewhat dissatisfied	Not sure	Somewhat satisfied	Very satisfied	Responses	Mean
1	Overall ease of use	0	2	2	7	8	19	4.11
2	Overall size	0	11	5	0	3	19	2.74
3	Display layout	0	2	4	5	8	19	4.00
4	Battery life of the device	0	1	8	7	3	19	3.63
5	Overall portability of the device	0	1	1	0	17	19	4.74
6	Weight of the device	0	1	0	1	17	19	4.79
7	Keyboard arrangement on the device (i.e. touchscreen keyboard	0	0	2	10	7	19	4.26
8	Keyboard size on the device	0	6	5	3	5	19	3.37
9	Sensitivity of the keyboard	0	1	4	7	6	18	4.00
10	Usefulness of "touch screen" keyboard compared to a physical keyboard	1	2	5	4	7	19	3.74
11	Size of the touchscreen	4	4	6	4	1	19	2.68
12	Sensitivity of the touchscreen	1	1	4	7	6	19	3.84
13	Readability of content on the	3	7	2	2	4	18	2.83

	screen							
14	Webpage surfing and navigation	0	4	3	4	7	18	3.78
15	Application (app) loading and speed	0	3	5	6	5	19	3.68
16	Ability to find necessary applications on the device	0	1	5	6	7	19	4.00
17	Application loading and speed	1	2	7	2	6	18	3.56

Statistic	Overall ease of use	Overall size	Display layout	Battery life of the device	Overall portability of the device	Weight of the device	Keyboard arrangement on the device (i.e. touchscreen keyboard	Keyboard size on the device	Sensitivity of the keyboard	Usefulness of "touch screen" keyboard compared to a physical keyboard	Size of the touchscreen	Sensitivity of the touchscreen	Readability of content on the screen	Webpage surfing and navigation	Application (app) loading and speed	Ability to find necessary applications on the device	Application loading and speed
Min Value	2	2	2	2	2	2	3	2	2	1	1	1	1	2	2	2	1
Max Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mean	4.11	2.74	4.00	3.63	4.74	4.79	4.26	3.37	4.00	3.74	2.68	3.84	2.83	3.78	3.68	4.00	3.56
Variance	0.99	1.20	1.11	0.69	0.65	0.51	0.43	1.47	0.82	1.54	1.45	1.25	2.15	1.48	1.12	0.89	1.56
Standard Deviation	0.99	1.10	1.05	0.83	0.81	0.71	0.65	1.21	0.91	1.24	1.20	1.12	1.47	1.22	1.06	0.94	1.25
Total Responses	19	19	19	19	19	19	19	19	18	19	19	19	18	18	19	19	18

9. Using the following scale please rate the device you tested:

#	Question	Yes	No	Responses	Mean
1	Is this device faster to use than traditional learning methods?	14	5	19	1.26
2	Is this device more efficient to use than traditional learning methods?	13	6	19	1.32
3	Is this device more enjoyable to use than traditional learning methods?	16	3	19	1.16
4	Did you prefer accessing the content on this device better than over a traditional computer	5	14	19	1.74

Statistic	Is this device faster to use than traditional learning methods?	Is this device more efficient to use than traditional learning methods?	Is this device more enjoyable to use than traditional learning methods?	Did you prefer accessing the content on this device better than over a traditional computer
Min Value	1	1	1	1
Max Value	2	2	2	2
Mean	1.26	1.32	1.16	1.74
Variance	0.20	0.23	0.14	0.20
Standard Deviation	0.45	0.48	0.37	0.45
Total Responses	19	19	19	19

10. This device costs (Device Price). For its abilities, is this price:

#	Answer		Response	%
1	Too low		0	0%
2	Just about right		14	78%
3	Too high		4	22%
	Total		18	100%

Statistic	Value
Min Value	2
Max Value	3
Mean	2.22
Variance	0.18
Standard Deviation	0.43
Total Responses	18

11. What did you like about this device?

Text Response
portability
How light it was
portable
light, portable, easy to carry
size, weight, clear screen
faster with wifi
easy to carry
portability
small device size
portability, ease of use, battery life
size and weight makes it easy to carry
small, great portability for in a pocket on a disaster
size, applications
size of the device
Portable and the battery lasts

Statistic	Value
Total Responses	15

12. What did you dislike about this device?

Text Response
size
very small
screen size
Hard to read
hard to read, to small for this type of study
slow, small keyboard, hard to hit buttons and letters
screen was too small
too small, video wouldnt load
screen size too small for this type of work
Too small for reading information
display screen is too small; had to do a lot of zooming which made me dizzy
The confirm box refuses to stay in the center: I can's submit tests
The size of the writing and man
small font: When increased in size it takes away from what you are trying to look at. Delayed response to clicking on answers
The constant readjusting. Took a couple of times of touching to get things going
screen size
screen a little small: overall size is nice. Slow internet
Readability of the text on the screen
Screen is way too small

Statistic	Value
Total Responses	19

13. What would you change about this device?

Text Response
a little bigger
keyboard size
make it slightly bigger
screen size
screen size
screen size, sensitivity
screen size
make it bigger
make bigger
The size
Touch sensitivity
Make it a wee bit bigger
Battery Life
sensitvity of touchscreen
Screen needs to be larger

Statistic	Value
Total Responses	15

14. Would you recommend this device to others?

#	Answer		Response	%
1	Yes		15	83%
2	No		3	17%
	Total		18	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.17
Variance	0.15
Standard Deviation	0.38
Total Responses	18

15. Additional comments:

Text Response
Overall, after evaluating all 3 devices, I would rank the Motorola Droid as the best/the one I would buy
I personally have one and enjoy it, but not for educational or reading purposes.

Statistic	Value
Total Responses	2

16. Device Price

Value	Total
200	19